REMARKS

Favorable reconsideration of this application is requested in view of the following remarks.

Claim 1 has been amended to include the limitations of original claim 3 and clarify that the layers essentially consist of aluminum, and further amended to clarify the configuration of the layers containing aluminum and the layer containing the element other than aluminum, as supported by the specification at page 4, lines 30 – page 5, line 7 and examples 1-9 at page 10, lines 25-30, page 11, lines 34-36, page 12, lines 5-7, 13-15, 21-23, and 31-35, page 13, lines 4-6, 12-14, and 20-22, respectively. Accordingly, claims 2, 3, and 5 have been canceled without prejudice. Claim 15 has been added to be an independent form of original claim 4. Accordingly, claim 4 has been canceled without prejudice. Claims 16-24 have been added as supported by claims 6-14. Claim 10 has been amended as supported by the specification at page 5, lines 8-12. Claims 6-9 have been amended editorially.

Claims 1-3, 5-9, and 14 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (Japanese Patent Application Publication No. 2001-135352) in view of Berkowitz et al. (U.S. Patent No. 7,459,234). Applicants respectfully traverse this rejection.

Kato discloses a secondary battery that contains an alloy including aluminum in the collector (see paras. [0015], [0038], [0044]-[0045], [0051], and [0055]). Kato fails to disclose layers that essentially consist of aluminum (the aluminum layers) and a layer that contains an element(s) other than aluminum (the non-aluminum layer) as claim 1 recites. In addition, the reference nowhere discloses a multi-layer configuration such that the aluminum layers are disposed on the sides of the non-aluminum layer opposite to each other, as claim 1 recites. Claim 1 provides a collector that has a low electrical resistance, i.e., a high electrical conductivity, and suppresses sudden increase of the temperature upon an internal short circuit (see page 1, line 36 – page 2, line 5 of the specification). By having the aluminum layers and non-aluminum layer in the particular configuration in

the collector as claim 1 recites, the aluminum layers and non-aluminum layer can melt upon a short-circuit at 630 °C or lower, and as a result, the short-circuit portion of the collector shrinks and separates from the collector, and thus the short circuit is resolved before the materials in the positive electrode start melting (see *id.* and page 2, lines 15-30, page 4, line 30 – page 5, line 7, and page 10, lines 4-14 of the specification). By arranging the aluminum layers adjacent to the non-aluminum layer containing an element other than Al, the aluminum layers and non-aluminum layer having an interface exhibit at the interface similar characteristics of an alloy including Al and the element other than Al and start melting like the alloy at a lower temperature lower than the melting points of Al and the other element, such as 630°C or lower, before the materials of the positive electrode start melting (see *id.*). Al is a material known as that having high electrical conductivity (see page 8, lines 24-29 of the specification) and thermal conductivity as well. It is known in the art that the electrical and thermal conductivities of an alloy including Al are generally lower than those of Al itself. The aluminum layer of the collector in the configuration of claim 1 can melt like the alloy including Al and the element other than Al without compromising the advantages of Al such as the high electrical conductivity (see *id.* and page 2, lines 1-5 of the specification). Kato, which discloses the alloy including Al, in no way teaches or suggests the collector having the non-aluminum layer and the aluminum layers that essentially consist of Al and are disposed on opposite sides of the non-aluminum layer, as claim 1 recites, nor the advantages of the collector such as resolving internal short circuit by melting the short-circuit portion like an alloy including Al and the element other than Al when internal short circuit occurs, without compromising the advantages of Al as discussed above. Thus, the advantages of suppressing sudden increase of heating upon internal short circuit by melting the collector materials without compromising the advantages of Al are unexpected from Kato. Accordingly, claim 1 and claims 6-9 and 14, which ultimately depend from claim 1, are distinguished from Kato.

Like Kato, Berkowitz discloses an aluminum alloy as a collector material (see coln. 1, line 62 – coln. 2, line 8 and table 1 in colns. 4-5) and discloses neither the non-aluminum layer and aluminum layers contained in the collector nor the configuration of

thereof as claim 1 recites. Accordingly, Berkowitz does not remedy the deficiencies of Kato, and this rejection should be withdrawn.

Claims 4 and 10-13 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (Japanese Patent Application Publication No. 2001-135352) in view of Berkowitz et al. (U.S. Patent No. 7,459,234), and further in view of Asanuma et al. (U.S. Patent No. 6,001,139). Applicants respectfully traverse this rejection.

Claim 15, which includes canceled claim 4, recites that the collector of the positive electrode includes an aluminum sheet and a plurality of island regions, which contain an element other than Al and are dispersed in the aluminum sheet. Like the configuration of claim 1, the aluminum sheet and the island regions have an interface, and the collector exhibits characteristics similar to the alloy including Al and the element other than Al (page 4, line 30 – page 5, line 7 of the specification). Thus, for at least the same reasons as discussed for claim 1 above, claim 15 and claims 16-24, which ultimately depend from claim 15, are distinguished from Kato in view of Berkowitz.

Asanuma discloses an alloy including Al as a negative electrode material (see coln. 11, lines 1-16). The reference fails to disclose the collector of the positive electrode including the aluminum sheet and island regions, which contain the element other than aluminum and are dispersed in the aluminum sheet, as claim 15 recites, and the reference fails to remedy the deficiencies of Kato and Berkowitz.

Claims 10-13, which ultimately depend from claim 1, are distinguished from Kato in view of Berkowitz for at least the same reasons as discussed for claim 1 above.

Asanuma, which discloses an alloy including Al as a negative electrode material as discussed above for claim 15, also does not remedy the deficiencies of Kato and Berkowitz for claims 10-13, which requires the non-aluminum layer and aluminum layers, which are disposed on the sides of the non-aluminum layer opposite to each other.

Accordingly, this rejection should be withdrawn.

In view of the above, Applicants request reconsideration of the application in the form of a Notice of Allowance.

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